Rec'd March 20th
Ans March 30th

Bigelow

Near El Paso
Jany. 24th 1852

Dear Sir!

I take the liberty of enclosing you some seeds &c. collected in this neighborhood and that of the Copper Mines this season. — I have not heretofore collected the Cactaceae because I hardly knew how to preserve them or distinguish one from another. —

Within a few days however I have seen a letter from you addressed to Mr Wright who is with us and who has been an old Collector in Texas. — In that you give instructions with regard to this collection and observation of which I shall have the pleasure of availing myself. — Mr Wright is out now surveying and unless relieved of those duties will hardly be able to collect as extensively as heretofore. —

He has some Cacti now collected above (Copper Mines) and requests me to send them with others I may collect myself. I may do so and send by the 1st Santa Fe train that leaves this place

I have sent what plants I have collected to Dr. Torrey and if there are any order among them on which you are especially engaged he will send them to you. — Last year what I collected coming up from San Antonio I sent to the Smithsonian with a request that they be sent to Dr. Gray Dr. Torrey or yourself. —

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Mr. Sullivant a personal friend of mine had promised to work out my Musci before I left home but I have been informed that he is incon-
=solable on account of the loss of his accomplished lady and that since that time he has not attended his study. — I sent a package last Summer but have not yet heard from him or them. As far as I know Mr. Sullivant is the only American Botanist who devotes himself to that branch. — Please acknowledge the receipt of the seeds if they are of any interest to you I shall remain for a few months and it may be ale summer in the vicinity of El Paso to which you can direct either by the way of Santa Fe or San Antonio

Most Respectfully
Your obt Servt
John M. Bigelow

P.S.

New Paso del norte
Jan'y 29. 1852

Dear Sir:

Since I wrote above I find I can get an opportunity of sending the Cacti I mentioned by Smiths train to San Antonio. — As they will probably go through this way a good deal sooner than the other. I embrace the opportunity. Mr. Wright collected his specimens some time ago: Mine were only collected a day or two since I hope they will not spoil.

Among mine are several duplicates of a beauti=
=ful Cereus some of which I should be most happy
to get when I come home. Mr. Wright has some
of them also. The Opuntia Arbrescens if they
grow I should also like to divide with you. —
The Fouquiera & willow leaved Bignoniaceae I fear
are not grow. — I had not time to put them up right.
I happened on them at the moment I was packing
the Cacti. — If I had thought of it sooner I could
have had them done up better —

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

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Rec'd Aug 7 14
Ans Sept 7 14

1

Direct to Fort Inge on the Leona
via San Antonio

Camp at the Mouth of the Canon
on Rio Grande 60 Miles below Seminole
Eleano Texas June 18. 1852

Dear Sir:—

I received your Kind letter of 30th March
May on the evening of the 10th June at Seminole
Eleano Texas and on the morning of the 11th
we started on our March down the Rio Grande
We arrived at this place yesterday and shall
probably remain some 5 or 6 days in taking obs=
ervations for Longitude.— We shall then go to
Presidio Del Norte where we shall probably stay
a month or 2 and then proceed to Leona
Station Texas.— It is uncertain how long we may
remain at that place.— Should you get this in
time to have a letter conveyed to Leona by the
1st of October I think I can get it.— Soon after
that time we shall probably be on the river
some place below Eagle Pass but where I
have no means now of determining.— I am
now with Maj Emory & Dr. Parry both and shall
probably go with them all the way down the River
Mr. Wright goes home to see after our botan=
=ical interests by the train that conveys this letter
and will visit you on his way with a great lot
of Cactaceae living and dried.— While at
Frontera 8 miles above El Paso Mr. Wright and
myself collected a considerable number of
living plants, a complete sett of which Maj
Emory desires you to select for yourself and
accept from him.— Maj Emory has been most lib=
=eral accomodating and Kind hearted in affording us
all the facilities of collection and transportation in
his power and the gratification it will afford him
in your acceptance of them will give us a

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just as much pleasure as if you had accepted them from us because we had collected them for the express purpose of sending to you. Among the seeds you will find the C. clavigera with beautiful large yellow flowers. I have also procured plentifully of the ripe seeds. A profuse bloomer with beautiful crimson or Scarlet flowers nearly if not quite akin to your C. Roemeri are also send as well as seeds. &c. The same flowers continues open night and day for 8 or 10 days and the plant blooms 6 weeks or 2 months. - Besides these I think we have 3 undescribed species Notes & Specimens of which Mr. W. will give when he arrives. — We have in this region 5 cylindric Opuntiae some of them probably new as well as several of the Applanatae division. Mr. Wright will attend to them all except a gracilior which I have found time to left us. - It may be he will pick it up as he passes. - Dr. Parry seems disposed to confound it with the (very common in this region) O. Vaginata with which it grows. — The shrub is taller & stouter - the fruit is larger more juicy and of an orange color - flowers not so yellow having a brownish tint on the back of the Sepals & petals, opening in the morning, while the vaginata opens only late in the evening or in the after noon of a cloudy day, the areolae are larger and different and the spines are either quite different or all dropped off while the vaginata is full of the

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I enclose a few of the berries of last years growth which persist the whole year like the O. rafinata. — Mammillaria I am not much acquainted with but Mr. W will give a good report of them. We have 5 very distinct species of Echinocactus some of them beautiful and at least 2 or 3 of them undescribed. unless you have them in Mr. Wrights unpublished Plantae Wrightianae I have sent my collections of dried plants to Dr. Torrey and I presume he will send all the Cactaceae to you as it is my wish you complain of a deficiency with Mr Wright in noting localities, and I fear for some time to come you will have the same complaint to make of almost every collector who passes through this country for I can assure you it is rather a difficult task to mark a locality closely when you are a thousand miles from nowhere. — If you will recollect it is near 700 miles from San Anton to El Paso be= =tween which there are a very few points that have a local habitation and a name. — Mr Wright is one of the best collectors I know and has been more careful in his labels than I have I will improve my self on your hint however and be as explicit as possible. —

With regard to your excellent instructions it would be presumptuous in me to say they could be improved because I had been in this country a whole [illegible]

no definite idea of Cactaceae into my head until I studied your instructions.

Since then I can easily distinguish our 4 known species one from the other at the first glance without flower or fruit. —

Mr. Wright being the older & more experienced botanist has taken the notes & made descriptions of those we have collected together this spring. — But I shall most certainly adopt your plan and let you know how I succeed on the first occasion I meet. —

I send some seeds of Fouquiera Splendens also of a Cylindric Opuntia with long clavate joints probably new. We collected the last years fruit but did not see it in flower. Mr. Wright has notes of it also

Please write me as often as you can. — With sentiments of respect

I am most truly

Yours

John M. Bigelow

Geo. Engelmann M.D.

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Rec'd Sept 22nd
Ans Nov 10

Camp Stevens opposite Vicksburg
Dec 12th 1862

Dear Sir —

I received your favor of the 4th inst
by the hands of Mr Fowler who arrived
safely with his family & effects on the
19th inst. I am pleased to see him
& family & shall do what I can to make
them comfortable. I am sorry that
Mr Fowler has taken it into his head
to go North at this season of the year
when (owing to the Rebels having
command of the river) he is liable
to be detained for months. I
have written to Mr Fowler & Mr Wm Hoffman
from whom we have collected in the neighborhood of
Memphis where the greater part of our machinery
was stored & find it is quite common in this
country to sell at the Cabolo of the Ohio & pay
the freight from there to your place. I
do not know how you will be able to get
them from Memphis now that the Rebels
have command of the river. I do not know
that I can be of any assistance to you
in getting them up. I have written to
Mr Fowler & Mr Wm Hoffman to see
what can be done. I am sorry that
Mr Fowler has not brought with him
all the machinery that belongs to you
as it will be very inconvenient to you
& myself to be without it.
The following are copied from my letter
to Mr Fowler

Boat is drawing about 12 - 22 inches light
& will be ready for receiving about 12 - 15

oblique, narrow base, broad, obtuse or rounded at the top — young leaves keeled) acute at the bottom. — Involucre of pale oblong scarious bracts (especially the outer) elongated
5 mm long — Flowers white, tubular-campanulate, 4-toothed, deciduous, 1 cm long, 3 mm in diameter (or young flowers 1 cm long) or 4-petaled (on older plants 6–10 lines). Radical leaves 12–15 cm long 4–6 cm wide very slightly narrowed to the base, petiole 2–3 cm long, sparingly pubescent with scattered hairs — Stem 3–4 dm high, slender, simple or branched above, glabrous or the lower internodes sparingly pubescent with scattered hairs — Leaves of the lower internodes linear-lanceolate, upper ones linear-oblong, obtuse, rounded or subcordate at the base, sessile, 1–2 cm long, 1–2 mm wide, glabrous, 1-nerved, the lowest ones soon withering away — Heads 10–12 mm in diameter, in loose, few-flowered, terminal corymbs — Involucre campanulate, 5–6 mm long, 4–5 mm in diameter, glabrous, its bracts in 3–4 rows, scarious-margined, the outer ovate, the inner oblong, obtuse, 1 mm wide — Receptacle flat, naked — Flowers yellow, 4–5 mm long, the tube 1 mm long, the limb 4-parted, the lobes linear, 1 mm long — Achenes oblong, 2 mm long, 1 mm thick, glabrous, 4-angled — Pappus of 2 rows of white hairs, the outer 1 mm long, the inner 3 mm long, plumose — Common on the banks of the Susquehanna from Northumberland to Harrisburg.

the Coiboro Ft. Antelope Grande and on both sides
of Pinedale Post Office —

I have diligently visited the Hole of
the Country but found no trace of Limestone
rock & Gypsum in search and a Thousand miles
I have yet before me I only pass through Mesa-
ta by one of the Mountainous & there for a bit it stone
visited upon Lee &c.

I shall be within reach of Letters
Matters Letters for some months, so that I can
& can receive from there quick post than from
any other. for some time. When you write please
direct there. — I am almost alone in the country
& Letters are the greatest, so that a letter
from one relation I only treasure by copper fastens
Cleaves the Indians of necessary a Comely Lower
Lip Pass is with the Mexicans and the Texas with a
Lower Lip pierced by Eagle Bone.

With Sentiments of true Love
I am Dear Mary Yours &c.
Wm. McPherson.

Upon Engagement for
St Louis.

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Rec'd Dec 11th
Ans'd Dec 12

Eagle Pass Nov. 15. 1852

Dear Sir! —

Your interesting letter of Sept 7th was received several weeks ago and I have but now had time to acknowledge it in consequence of being sent into the field between the mouths of Devils & Pecos rivers with Mr. Schott. The Indians making such hostile demonstrations as to render my services as Surgeon necessary. — They did not however disturb us and we safely returned here again a few days ago. — I am glad you received so rich a collection of Cactaceae by Mr. Wright. — In those gathered here (Opuntia) I fear you will find my notes in as high a state of impoverishment as those of Mr. Wright. — I wrote at this date for Dr. Torrey to send you my flowers but I fear they will not tend to elucidate our collections any better than his. — From this time I will endeavor to do better. —

Between the mouths of the Pecos Mr. Schott himself found a Mammillaria? which must be new. At any rate it is not one of the 14 in Wis Rep. Pl. Fendl. or Pl. Smith. the only American publications on Cactaceae I know and all to which I can now have reference. — In accordance with your suggestion we name it M. micromeris but if it be a new species it should be called M. Schottii because they who were in company when first found it attracted his eye first. — — Mr. Schott is a good botanist and

on My Recommendation will address you altho'
a personal Stranger by this or the next Mail.—
Mr. Schott is also an excellent Botanist and
and will send you a sketch of this as well as
some other Cactaceae which with a flowers &
the poor descriptions I herewith send will enable
you to decide upon it. — In a few days I am
shall send you a box of Cactaceae among which
you will find this one in a living state. I also
inclose a few of the seeds. —

Mam. — Sp. undesc. — Entirely spineless, stem top
shaped, globose, or sometimes hemispherical and
somewhat flat on top. — Scales or leaflike projections
(tubercles) 12—25 obtuse ovate or sometimes triangular
obtusely
what Keeled upon surface 4 lobed or trisulcate
which with the edges are irregularly transversely
cleft. — Areolae oblanceolate being formed by a
cleft of the 2 inner lobes. — Wooly oblong ovate, (3 lines
long 2 lines wide) many seeded with the tube of the
corolla immersed in the centre of the plants surrounded
with a copious silky hairy wool. Tube of the
corolla somewhat fleshy 4—6 lines long. — Sepaloid
scales about 12 lower ones linear lanceolate upper ones
oblong obovate. Sepals about 8 obovate = spatulate
mucronate rose colored (6—9 lines long 2 lines wide)
Petals linear spatulate (9-lines long 2 lines wide) rose
color. Stamens numerous filaments white
anthers orange. Stigmata exserted funnel
shaped 5—10 parted stigmas papillose

light yellow ash thin ~~15~~ steps. Seeds black umbilicate & some what pyriform — Lower & central part of the plants almost gelatinous — Found on sand gravelly limestone hills near Fairy Springs on Rio Grande between Devils & Pecos rivers. Seldom grows above the surface of the ground.

Flower opens only in the middle of the day and probably only in dark shine also. Oct 21st 1852.—

We shall probably visit the mountains of Santa Rosa some 90 miles distant in the course of a day or two. If any thing of interest occurs we will let you know as soon as we return.

With sentiments of high esteem

I am yours truly J. M. Bigelow

Geo. Engelmann M.D.—

P.S. Capt. Van Vleit whom you mention I have not yet seen nor do any of the officers of the post here know his whereabouts.

J. M. B.

I am here in daily fear of my life on account of my deeds of the Mexican & cannot finish them now.— Mr. Schott will probably call upon you soon

—

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Rec'd Dec 29th
Ans Jan 13th 1853.

Eagle Pass Texas Nov 26 1852

My Dear Len —

A few days ago Mr Schott and myself put up a box of Cactaceae and a few other things for you and committed them to the care of Lewis and Groesbeck of San Antonio who will see that they are forwarded from New Orleans to your address at St Louis — We have made arrangements for the payment of the cost of transportation to New Orleans and from thence whatever it may be will see that you are remunerated in some way — In this box are some Yucca or Aloe roots that I should be glad to see in cultivation at home — I have put up duplicates and when I could sometimes more of which I should like to get for my garden when I return — You will also find some Leguminosae or rock roses which require no care and of which also I should like to get some.

It is likely from present appearances that we shall soon be on our way home — St Louis being in my most direct route home I shall in this event do myself the honor & extreme pleasure of calling on you — The exact time however it is impossible for us now to say — Mr. Schott & Dr Parry are both with me — Dr Parry having just arrived from a tedious trip through the mountain canons between Presidio del Norte and this place — You will probably

hear from him soon. His report of that region will doubtless be very interesting. — The little Mam inermis or 3 Chatti he also found and it may therefore be better entitled to the name of Panyana. If we deserve the distinction of having our names handed down to posterity among the Cactaceae then is plenty of room for all of us among our El Paso Collections taken on by Mr. Wright —

I am doing little at present and had intended taking a trip to the Mountains of Santa Rosa. But the difficulty - nay impossibility of getting proper passports here and the unsettled state of Mexico renders it hazzardous in the opinion of my friends. There is little danger of my life being lost but I might possibly be detained against my will which might render my return somewhat uncertain and my movements quite inconvenient. — And the little one might hope to gain at all interesting would hardly compensate for the risk we would be obliged to run. .. If I do not go to Santa Rosa I shall most certainly make a visit and call on the Pioneer of Botany in Texas Dr Lindheimer of New Braunfels. —

With sentiments of the highest regard
I am truly & sincerely yours &c.
John M. Bigelow

Geo. Engelmann M.D.

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Rec- Jan 14th
Ans Jan 15th

Eagle Pass Dec. 19. 1852

My Dear Sir:—

I received your very interesting letter while on the road to Dev Mr. Lindheimers and proved for me an extraordinary piece of good luck, as it procured for me consideration from him, that I could not have obtained on my own merits. — You speak of your letters troubling me!! Far from it; they afford me much gratification & pleasure. — If I could have received them sooner, I could have done much better in collecting — preserving — packing and noting the different forms of Cactaceae that have come under my observation. — It is only lately, and since I have seen your excellent instructions, and admirable letter, that my eye has become trained to distinguish closely resembling forms. — I enquired of Mr. Sweet, to whose care I committed the Cactaceae sent from Frontera, (not Coppers Mines,) last Spring, and he has written on to know about them. They are probably spoiled at Port Lavaca or New Orleans. — It is not so much matter however, as in all probability Mr. Wr. has every thing, and more, that was contained in that box. —

You almost alarm me by saying you "hope soon to get good news from me"! I have exposed myself to much fatigue, and even danger, in collecting the few things sent home to you and Dr. Torrey and the idea of bad news connected with it, is truly disheartening, and makes me tremble. — It is utterly impossible for tongue or pen to describe this country, so as to give an adequate idea of it

wild barren appearance, or at least the greater portion of it.—

I answer your inquiries from the best data now in my possession.—I have sent all my plants, duplicates and all, to Dr. Lovey.—Many of my notes now are from memory.—

Opuntiae

1st 2nd } O. fulgescens. } These are I think unquestionably
2nd } O. vaginata. } identical.

O. Bigelovii is the same as O. Emoryi.—I recollect well sending you the seeds.—Among my collections sent to Dr. Lovey are some very good specimens of fruit: it was not in flower when we found it.

3rd O. Wrightii. I found near Presidio del norte a cylindric Opuntia, which I take to be this. You will find some poor specimens of immature fruits and joints in my last collection, sent on lately to Dr. Lovey.—

4th O. Arborescens. very common from the Pecos to El Paso and on up to the Copper mines

5th O. Emoryi Same as O. Bigelovii. See above

6th O. Clavarioides.—Very common. I did not collect the flower of this but you will find, this fruit in my collections to Dr. Lovey.—

7th O. Macrorhiza. I do not recollect it: I suppose it grows here.—

8th O. fragilis. I am in much confusion here.—This is certainly not O. fragilis Pl. Lindh. P. 445, because that is a ligneous Stemmed Cylindraceae; while you have grouped this in my lists, among the appellanatae.—Neither can it be O. fragilis of Nuttalo, in Torrey & Grays Flora 1st Vol. P. 555.

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At Frontera, we collected a small prostrate yellow flowered Opuntia, with rather small, thick, applanate fragile joints, which I supposed was the one you referred to, until I happened to look at Pl Lindh !! Mr. Wright mentioned to me, while we were collecting it, that he had long ago sent it on to you

9th O. Xanioides. I am not certain if I know this. - But at Escondida creek near the Pecos, I found an Opuntia with a small, nearly globose red berry, applanate joints, & and very numerous yellow spines. - I inspect specimens with pretty full notes, I made at the time, which I think were packed up and sent in my last collections to Dr. Losey. -

10th O. Phaeacantha. Common. Pl sent to Dr Losey.

11th O. Miniata I collected the fl. & fr. of this, and recollect it well - very distinct and pretty.

12th O. Engelmanni. If, what I take to be your Engelmanni be true, I think you have confounded it with O. Lindheimeri. Mr. Lindheimer showed me his plant at New Braunfels, which appear identical with the Northwestern forms. - This plant has large, pear shaped, purple fruit with abundance of deep purple juice, and numerous large seeds. - When I left El Paso, it was in flower: I collected a few which you will find in the Coll. sent to Dr. L. - It grows there, only on mountains, and rocks. - Lower down, and from Presidio del Norte to this place, I found apparently the same plant in fruit. - I feel almost certain it is the same as the one shown me by Mr. Lindheimer. - The fruit is handsome, juicy, and inviting to the eye, but very unpleasant to the taste It grows here on the plains as well as rocks. -

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Associated with this at Presidio del Norte, is another species, much resembling the long brown spined one, if not identical with it. — The joints are smaller, more prostrate, or rather less erect, the fruit more ovate, the seeds as numerous, but smaller, the spines red, and so pleasant to the taste that the Mexicans eat them freely; but Americans are not very fond of them. — I am not certain that this is the Phaeacantha. —

I was encamped on the Limpia, 2 or 3 weeks last Summer, but saw no globose Cereus there. As you surmise, it must have been the Echinocactus Wr. found, because it grows there, although I collected none in that locality. —

Cerei.

1st Cereus Acanthus, I know nothing about —
2nd C. pectinatus, ditto.
3rd C. caespitosus, I have from Mr. Lindheimer
4th C. dasyacanthus and as you say, a splendid species; fruit edible, and when fully ripe, quite delicious. —
5th Echinocactus. I am not certain I know this. At Fronteras we collected a very common one, with very small greenish colored flowers, and also a very profuse bloomer, not handsome. —
6th C. viridiflorus. This I do not know.
7th C. Roemeri, or Coccineus. We collected the flowers and fruit of this, and it is the only crimson or bright red flowered one I know; as, also, the only one that the flower remains open day and night. It also continues in bloom a month or six weeks. — The fruit is also

edible, of a gooseberry flavor. This species is better entitled to the appelation of Subterranean stemmed, than the others.—

8th— C. Fendleri, Collected at Fort Fillmore? flowers dark purple: fruit edible, but variable in size. I do not recollect about the spines being bulbous at base.

9th C. Albispinus. I am not certain I know this. At the Canon of the Rio Grande, we found a branching, white spined cereus, of 5-9 ribs, weaker & softer in its organization, than the other common forms, of a pale green color: color of the flowers of a paler purple, & not nearly so full and handsome as some of the others. Growing exclusively on the sandy bottoms of the Rio Grande. The fruit of this variety, is the most variable, some of them so astringent as to be unpleasant: others quite eatable, although the fruit of this is the poorest of this subsection fruit green to purple

10th C. Stramineus. I am not certain if we refer to the same plant here.— But I am certain I never saw a yellow flowered cereus, excepting C. dasyacanthus. Neither has it a Subterranean stem, but it grows in dense, ovate, or oval stools, much like the figure No 1, in May Emory's Report, which you call a Mammillaris. I have seen 150, or more branches to one root, closely compacted together, whence comes the appearance of the Subterranean stem. The spines are very densely set, long, and variable in color— Sometimes nearly white,

what is the dimension & shape of such a bunch or stool

(700 Parry)

– Straw Color – or even sometimes quite brown or dusky. I do not know whether your name has reference to the color of the Species, or of the flowers. – But, pray your double mark of doubt to Mr Wrights observation of "Yellow flowers", I suppose it has reference to the Color of the Species. – This is the "large delicious purple fruited Ft Tejon" one. The flowers, (not fruit) I call purple, but they may be a shade or two lighter and brighter than the others. – And if I remember rightly Mr. Wright & myself disputed about the proper color of this very plant; he, calling the flower crimson, and I, purple. – At any rate, the color is quite different from that of C. Roemeri. – Dr. Parry's recollection of the flower is, that it is crimson. This question however can be easily settled, because Dr P. & myself have sent home to Dr. Torrey, very good Specimens of this in flower. – This Species also retains the color of the flower, quite handsomely when well and carefully dried: whereas the Roemeri, becomes darker on drying. This is in my last collection, and will probably reach Dr. Torrey, about the time you get this letter. I have requested him to send them on to you. – Well then, we have 5 very distinct species, which I know, that give edible fruits. – They are Leasyacanthus, (yellow flowered open only the day); Roemeri & Coccineus; (crimson, or deep red, open day & night); Fendleri?, (dark purple, open only at the middle of the day); albispinus!, (pale purple, open only at day); and, Stramineus?, (bright purple, open only in day time). 11th – C. Grossii. After the mistakes and blunders of the artists, at length quite correct. –

12th — C. (Sub. gen. Echinocereus,) Schottii, sp. nov?

Here, (Eagle Pass) and between here and Laredo, and at Rio Frio, we find this abundant, but can not identify it in any of your publications, or the lists you send me: and yet it is so common here, that I can not see how Mr. Lindheimer could have overlooked it. —

Stem branching, ovate = cylindric, (3-6 inches high,) 1½-2½ inches in diameter; Ribs 6-10, somewhat interrupted, acute, undulate, sometimes oblique; areolae distant, (6-12 lines,) orbiculate, younger ones white tomentose. Radial spines about 10, (7-12,) all nearly white, sometimes with a yellowish tinge. — 1 lower 4-7, six lateral 3-5, and, 3 upper radial spines, 2-3 lines long. — Central spine longer, & stouter, variable in color and size, (sometimes very slender,) mostly brown at base, white the upper third, and discolored yellowish or brownish at tip, about 1 inch, (8-15 lines) long, all perfectly straight. — Flower & fruit I have not seen, but Mr. Schott, who has collected it, informs me that it has purple flowers. Abundant; growing on sandy loamy soil of the Rio Grande bottoms, and back also on the plains. - At Rio Frio & Leona, it grows on the declivity of rocks. — If there is no impropriety, and this should happen to be undescribed, I should be pleased to have it dedicated to Mr. Arthur Schott, our accomplished artist. —

13th — C. Melanacanthus, sp. nov? In our last collection you will find another cereus, which we collected on Devil's River, and between there & mouth of the Pecos,

growing on rocks, and gravelly lime stone hills.—
The few observations I make of it, are entirely from
memory.— It is ovate-cylindric, 5–9 inches high,
2–3 inches in diameter: ribs 6–7, obtuse, groove
between them, very wide & shallow: areolae distant;
Spines 4–6, nearly equal, about 1 inch long, straight,
and nearly black, or quite a dark color.— no flowers
or fruit.—

Echinocacti.

1st Echinocactus setispinus. I find this abundant here
2nd E. Lindheimeri, I suppose the same as Lexensis;
also quite common, although I have never collected
it in flower or fruit.
3rd & 4 E. intertextus,
E. dasyacanthus. These plants, (if they are distinct?)
are very common about El Paso and Frontera.—
While at Frontera last Spring, I watched with much
interest, the flowering and fruiting development of these,
and the Cereus dasyacanthus, all intimately associated
in locality, as well as habit, and close resemblance
As soon as the Cereus was so far advanced as to
exhibit its spines or any, we determined from your
description, and locality, that it must be the dasyacanthus
When the Echinocactus came forward, we tried
hard to make 2 species of them, but there was such
a variety of intergrades, in the size, color, and shape

of the species, as well as the plants, that we gave up in despair. — Dr. Parry, when he came back from the Gila, supposed he had found your Cereus adustus, but lo! and behold! when it came to fruit, it turned out an Echinocactus!! and when we compared it with ours, it proved to be identical! Have you never yet suspected that your E. adustus & radians, were founded on this Echinocactus!!

5th E. brevihamatus is E. hystrix. I have beautiful specimens of this, in flower — & what I take to be this — sent to Dr Torrey.

I collected fruit at the Florence mountain, but in the flood at the Cañon, unfortunately lost it. — It is red, almost elevate = ovate, like some of the Mammillaria, about an inch long, 1-4 3 lines in diameter; seeds black I think, but in this I may be mistaken. —

6th E. Wrightii,

7th E. flexispinus. — I find almost infinite varieties of this, but none nearly allied, that I could identify as distinct. The extreme forms of the stems of E flex, and E. setispin, very nearly approach each other in appear = ance, and without flower or fruit, might be easily confound = ed. — The berry is large, juicy, & very acid.

8th E. leucacanthus, I do not know. Although you give it not as a new species I can not find a description of it in any of your publications. —

9th E. albispinus. This very distinct species from any others form I can saw, was not in flower or fruit,

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when we visited the only locality I ever saw it at, (South of El Paso). Dr. Parry has kindly communicated to me, his notes on this plants, made on his last trip to the Gila, which I transcribe.—

E. albispinus, sp. nov. "Axis ovate, 9 inches high, diam=
=eter, (including spines) 10 inches; ribs 13, oblique, acute, swelling with the areolae, into a mammiform protuberance, interrupted; deep, (1 inch), lower tubercles flattened transversely, and presenting a distinct division in the rib, upper tubercles perpendicularly flattened, each crowned with bunches of spines; embedded in a woolly areolae; areolae, oblong ovate, bearing flowers in the upper axils!! Spines 15, strong, angled, annulate, whitish, 11 outer spines, smallest, (12 – 16 lines long) 4 inner or central, longer, (1½ — 2 inches) and stouter. The 3 lower ones are received, or twisted to one or the other side.

"Fruit oblong, ovate, densely covered with wool including site form scales; 2 inches long. remains of flower & fruit, persistent, 2 inches long; mucronate scales projecting above the fruit!!

10th E. laticostatus.

11th E. Wislizeni.

Mammillareae.

I probably know less of these, than any of the others N. A. genera of this interesting family. — I hope however that Mr. Wright's Mexicacanthus, is not the pretty one figured and sent out by M. Schott.

Dr. P. is here, but Maj. Emory has gone down the river. — I expect to hear from him in a day or two. Most. Respectfully, J. M. Bigelow

Rec'd Febr 14th
Ans Febr 25

San Antonio Texas
January 28. 1853.

Dear Sir:—

Your Kind letter of Dec'r 12. I received yesterday and only take time now to acknowledge its receipt.— Should I not visit your Place while on my route home I will write you more fully which I have plenty of leisure on board steam boat up the rivers. I have another box of Cactaceae among which are some things new to me.— "N. Mexico" is doubtless an Anhalonium or belonging to that division of Mammillaria.— I shall leave here in a day or two for my home "Lancaster Ohio" where you will please direct your letters to me.— Good bye for a short time I hope soon either to see you or hear from you.— With sentiments of the highest respect I am your truly,

John M. Bigelow

Geo. Engelmann M.D.
St Louis Mo.

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Rec'd Febr. 23d
Ans Feb 25

Steam Boat Empire State
Ohio River Febry 20. 1853

Dear Sir:—

At San Antonio I had merely time to drop you a note acknowledging the receipt of your kind letter of Dec. 12th & promising to write when at more leisure in travelling up the River. — I now proceed to fulfil my promise. — From your accounts I have no doubt that the unguis Manzanillaris are Lentisc from the Rio Gr as the Anacahuita you mention, and you will have long before this received both the plant itself as well as Mr. Scholtz excellent figure of it. — Besides the box which contains it I have sent another collection of cactaceae collected in the neighborhood of Eagle Pass and Santa Rosa, of which I have heretofore apprised you. — Santa Rosa is a beautiful place & I have no doubt contains some rare plants but unfortunately for us besides being the middle winter, within a day or two after my arrival there I fell from a rock which ingured me quite seriously & rendered me unable to make any further collections. — The last day however I collected a cereus quite new to me which you will find in the collection

I was taken so sick the very day I collected it that I was unable to take notes of it as I had intended. I hope you will get the box containing it. — It is a beautiful white Spruce, entirely different from your "Abies Pinsapo"

While at N. Orleans I traced up the tray box of Cactaceae I sent from "Honduras" (not the Copan Mines) as you persist to write. They were shipped on the "Plantagenet" which was lost in the Gulf but among the freight that was saved with the agent to whom mine it was intrusted at N. Orleans getting no letter of instructions with regard to its destination and and the marking being with ink & had been rubbed so as to render almost illegible it was laid by in his warehouse where I found it. — The plants were all dead but they will be returned to you free of cost. You will probably get them before you get this letter. —

I should have been happy to have made it St Louis in my route home but could not do it without probably detaining me some week or 10 days, and it is so long since I have seen my family that I could not have enjoyed myself or rendered you much satisfaction

In Consultation with Dr Torrey & Darby and Maj Emory I may do so. I join home with more leisure in the Spring —
I received a letter lately from Mr. Wright who I presume you are aware has gone out as Botanist on the Behring Straits & Sandwich Islands Expedition. — It is to be hinted to me that you were delayed in your Smithsonian Contribution of Cactaceae by the orders of Maj Emory. — I write more fully of this when I get settled at home. —

The Book Shakes so that I can scarcely make my letter legible. — Let me hear from you as soon as Convenient as especially a Knowledge the receipt of the Boxes. — Direct your letter to "Lancaster Ohio" With sentiments of unfeigned Respect I am yours —

Geo Engelmann M.D.
St Louis

P.S. I have some cases of Opuntia Arborescens which if I do not visit you in the Spring I will send by the first opportunity I have such also. —

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Mr. Engelmann M.D.
St. Louis
Mo.

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Rec'd Apl 18
Ans — Day

Lancaster Ohio Apl. 11, 1853

Dear Doctor

Your long letter of Jan'y 13th 53
was this evening received having been remailed
to me from San Anton. I can not take time
this evening to answer it or the one I received some
time since acknowledging the receipt of the 1st Box
of Eagle Pass Cactaceae. — I have written to Messrs.
Lewis & Groesbeck of San Antonio to whose care
I had committed my second box of Eagle Pass
Cactaceae for some tidings of that box. —
I much fear from the length of time that has
elapsed and yours yet not having received
them that some serious accident has befallen
them. I most sincerely hope not however. —
I yesterday mailed my seeds of Cactaceae to you
and among them you will find the seeds of the
little Anhalonium. — They were collected from the
bursted capsule of the fruit. and I think you will
find them ripe. — I can not tonight lay my hand
on your former letter asking enquiries respecting this
interesting plant but will in a day or two do so
as well as your last (Jan 13th) most interesting one
I remember you frequently say you wish us to
collect seeds in the fruit and this reminds me
that one of your characteristics of Mammill.
is that the fruit is always juicy whereas in
the Anhalonium it is dry very similar to that

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Echin. lutic costatus — I recollect well we could find no ripe buds excepting where the fruit had burst and the seed was scattered among the wool of the veter and on the surface of the plant as is frequently the case with E. lutecostatus — you appear to think that Mr. Schott sent was collected from some other plant but on comparison with mine you will find them the same I think we made we gathered the seed in connection and saved every thing we could find without destroying the specimens we sent to you I will write again in a few days — In haste

Most Respectfully Yours &c

Geo. Engelmann M.D.

St. Louis Mo.

J. M. Bigelow

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Rec'd June 20th
Ans June 25

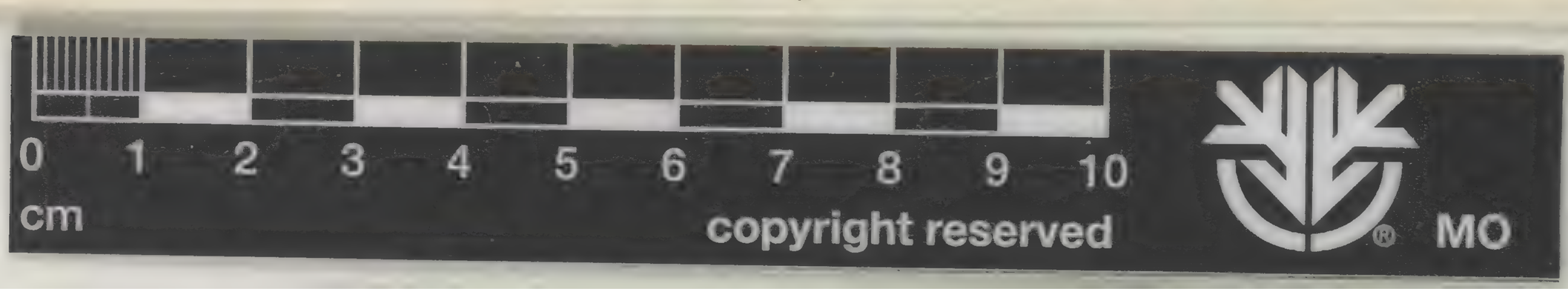
Steamer James Robb
June 13. 1853.

Dear Doctor —

While the matter is fresh in my mind I will give you the impressions made during our (tour) interesting examination of your Collections of Cactaceae. — 1st Mam. M. Scheerii. Macromeris, Micromeris, Grahami, tuberculosa, — Echinus applanata, radiosa, and Lasiacantha I well remember and are well marked & distinct. — The others I do not well ~~wd~~ recollect. — 2nd Echinocacti

These are all well marked and very distinct excepting perhaps E. Wrightii which I can not well distinguish from some of the numerous forms of Ferocactus the most variable species I know. — If I recollect rightly I think we also saw many intermediate forms of E. dasyacanthus sufficiently interesting so much as to unite them. — The safest plan I think would be to refer them as varieties of one another until more is known about them. 3rd Cerei.

The Cerei are rather mixed. — C. Greggii, dasyacanthus, viridiflorus, Deleranthus & Fendleri are all quite distinct except



↑ may be viridiflorus & Chloranthus which are
evidently closely allied. — Of the Crimson flowered
ones you enumerate coccineus, Roemeri, triglo-
=Chidiatus with flowers open night & day, cuneacanthus
time of the open flowers not ~~observed~~ specified and Polyacan-
=thus flowers not observed. — The most extreme forms
are probably readily observed between triglochidiatus
and Polyacanthus. — There is however a difference
very manifest in the shape of the flowers of the
lower Texan or Lindheimerian and the one
collected by us about El Paso. — Should the one
we collected about Devils River with pink and
black spines however prove identical with
your Roemeri I shall suspect them all to
be varieties of each other. — So much for
the scarlet flowered ones and I must say
ditto with all the purple flowered ones except
Fendleri which at first appears quite distinct

I have a vivid recollection of all the
cylindrica Opuntias and they all appear quite
distinct excepting that O. Wrightii seems like a
hybrid between arborescens & fulgidus or
vaginata. The orange fruited one that I
collected on the Rio Grande near the Canon
is probably also a variety of fulgidus

I have written Dr. Torrey requesting him to lend you if he can find the specimens I collected. — I procured stem flowers & fruits of previous year at the same time. but in the flood at the Canon may have lost the labels Of the Asplanata Opuntiae I so collect Engelmanni, Phacacantha Missiata, Engelm and Kansanas H. The others I know little or nothing about. — The clavate forms appear all to be well marked. —

I expect to reach St Whipple tomorrow and will then drop a note where you may direct to me

With kindness of esteem
I am yours truly
Jno K. Bigelow

Geo Engelmann M.D.
St. Louis Mo.

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Rec'd Feb 15
Ans Feb 17th 1855

Fort Smith Ark.
June 30th 1853.

My dear Doctor:

I received your truly welcome letter yesterday. We have been here several days and am Lieut Whipple has not yet arrived me me working over him every day. — I find growing abundantly here your O. Missouriensis & collected one single flower — Of those I collected the joints were quite oblong and ovate the Spines few & scattered and not entirely white Fruit immature. — I have seen (seen) quite thickly beset with the flesh clear white Spines. — Flower large sulphur yellow

In quoting Mr Wright's note with regard to a Cereus with few black Spines evidently mean C. Roemeri flowering very early in the season you ask the question whether he means that it flowers earlier than all others seen in that neighborhood or only Roemeri! I can only answer as far as I know. I am not certain that I saw (saw) the few dark Spined ones in bloom but the one we were in the habit of calling Roemeri is 3 or 4 weeks earlier commencing its flowering than any others in that neighborhood and con=

=times a much longer time in blossom and blooming. —

I do not recollect collecting at Sta Rosa any leaves resembling C. abbiatpinus excepting those very white spines one a day or two after they fall and the very day I was taken sick of Cholera morbus — While I was at your house I believe we decided that it was near C. chloranthus excepting that the Mexicans at Santa Rosa told me it had a purple or red flower. — They however may have confounded it with your C. acicularis (my Scholli) which grows abundantly on the same hill & near the same place

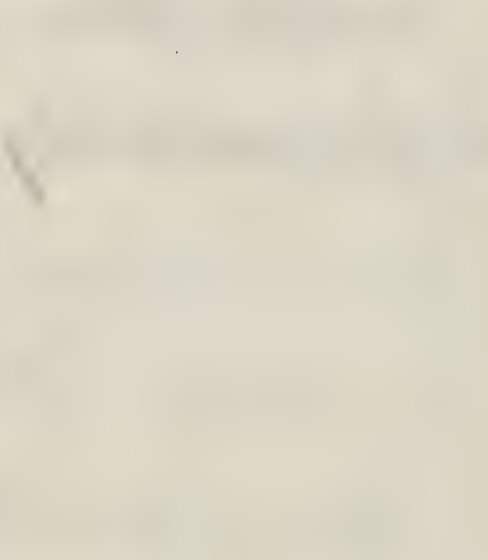
In the notes you gave me for instructions while at St Louis you remark that O. rapilei much resembles O. Missouriensis — to my eye the O. Miss. growing here but very slightly resembles (especially in habit the living O. rapilis or Frontera although both are spreading — They are very distinct. —

I shall be exceedingly happy to pay good attention to your numerous suggestions with regard to those I may meet on my route

I had no difficulty in getting my baggage at Cape Girardeau. — I intend visiting the Potean mountains about 35 miles South of this place in the course of a day or two: if I find any thing interesting I will write again before leaving Ft. Smith. — I found yesterday a tall (3–4 feet high) Amaryllidaceae? or something new it which I can not determine with the only light I have with me. Remember me favorably to Mrs. Engelmann and your Son.

Truly yours.
J. M. Bigelow

Geo. Engelmann M.D.
St. Louis
Mo.



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Rec= Dec 27th
Ans Feb 1st 1855.

Albuquerque Nov. 9. 1853=

My Dear Doctor.-

I had been at the pains of copying my notes on the Collections of Cactaceae (covering some 10 or 12 pages) for you — but on communicating to Lieut Whipple my design he dissuaded me from it for the same reason that our Collections are not also put into your hands. Viz. as you are now engaged on the paper of Cactaceae for Pl. Wrightii and also probably on the Cactaceae Collected under the Mexican Boundary Commission soon to be Reported by Maj Emory every item of information we may give you and every Specimen we may send you will go to enhance the interest and utility of those Publications and so far detract from the originality freshness and interest of what few we may collect on our trip. - As I have already been considerably cheated in that affair by one party and another I have ceased to feel as much interest in it as I should otherwise have done. You may recollect of the large box of Cactaceae brought home

by Wright in the Summer of 1852 - I had contributed my share towards filling it yet he never informed you of the fact

I have already collected between here and Fort Smith 26 or 27 Species 6 Genera & Mammillaria & 14 or 15 Opuntia

If I prove successful while Crossing ~~desots~~ the almost untrodden valley of the Rio Colorado to California in collecting plenty of interesting materials I will who has promised to give me an opportunity of working on them after my return which since laboring so hard on the mountains and plains in this collection will prove pleasant especially to one who takes an interest in them. I feel sorry for your present disappointment but confidently hope that your pleasure in studying them will only be deferred for a very short time because if I do take them I shall confidently rely on you for your large experience and able assistance in this Collaboration

Of those already collected I have reason
to believe there are several new Species of
Opuntiae and one or two Mammillaria

As my letter I now intended sending
you contains a resume of my whole
collections up to this point I shall pre-
=serve it until I can communicate it
to you without detriment to our
present expedition - -

With sentiments of the highest
regard I am yours &c.

John M. Bigelow

Geo. Engelmann M.D.
St Louis

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